Surgical Planing of the Skin

Complications and Reevaluation of Indications

WILLARD L. MARMELZAT, *M.D.*, Beverly Hills

• **One hundred plastic planing operations on the skin by means of a motor-driven wire brush were reviewed. Complications noted were pruritic erythematous eczematous dermatitis on a possible autosensitization basis, hyperpigmentation and milia. These occurred in a small proportion of cases and in no case were they permanent sequelae.**

Flat postacne scarring is more easily improved than steep "ice-pick" type scars.

The planing procedure is contraindicated in the management of certain tumors of the skin, portwine nevi, decorative tattoos, and generalized dermadromes.

The psychiatric and emotional impact of the patient's scarring on his personality is often a great one and the operator must bear in mind that plastic planing is no panacea for a severely neurotic patient. Therefore it is important that patients be carefully selected and that improvement rather than complete cure be stressed.

SURGICAL PLANING of the skin for removal of scars of various kinds has gained apace in use and in popularity within the past year or two. Many articles about the procedure have appeared in newspapers and in magazines of general circulation, as well as in medical journals. Since overenthusiasm might redound to the ultimate harm of this useful method of treatment, it is well to reexamine, in the light of developing experience, the indications for its use and the complications that are sometimes associated with it.

In a series of 100 surgical planing procedures the untoward sequelae and complications noted were as follows:

Pruritic Erythematous Eczematous Dermatitis

In 1954 the author reported two cases of this previously unreported complication. Six such cases have been observed since. The disease appears characteristically in the planed areas, ten days to two weeks after planing and initially appears to be an intensification of the "normal" postsurgical erythema. The process consists of scattered pinpoint vesicles on an inflammatory erythematous base. A minimal amount of serous scale and crusting is present. This complicating dermatitis usually responds to the local application of hydrocortisone in ointment or emulsion form, together with warm reducing applications such as Alibour's compresses. Sedation is required. In four of the six cases, hydrocortisone was given orally and response was noted in 48 to 96 hours.

The cause of the complication is not known. The delayed "incubation" period makes one think of an allergic phenomenon in which the patient has become sensitized, as it were, to his own serum or the combination of serum plus ointment, debris, sebum, bacteria and other material which might be applied to the face or become a part of the crust. Excessive refrigeration seems not to be a factor, for this process has been observed with minimal refrigeration. In two cases, pruritic dermatitis developed on one side of the face only. All patients who had the allergic dermatitis on the first planing showed it on subsequent planings also. Three of the eight patients gave a history of allergic sensitivity. It was interesting that in the six cases in which this phenomenon occurred after the first planing, it developed ten to fourteen days after the operation. In contrast, in the same patients the process developed rapidly after the second planing—within 48 to 72 hours. This seems to speak more for an allergic "reaction time" phenomenon in the latter instance.

At the time of this report the author had predominantly been using, for several months, dichlorotetrafluoro-ethane (Freon® 114) as a local refrigerant anesthetic, instead of ethyl chloride. In that time, pruritic erythematous eczematous dermatitis did not occur. This does not indict ethyl chloride, of course, although it can be suspect.

Hyperpigmentation

Three cases of hyperpigmentation, one quite severe, were observed. Surprisingly, and contrary to the experience of other investigators, the three patients were particularly fair, blond and blue-eyed. One admitted overexposure to sunshine. The borders of the planed area were particularly prominent and heavily pigmented a dark brown. The mid-forehead was especially affected. In all three cases, there was

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gradual response to applications of Benoquin (monobenzone) ointment, starting with dilute concentrations and working up to the full 20 per cent strength. In one case trichlorocetic acid and carbon dioxide topical therapy was required. All cleared eventually.

Milia

This complication has been reported by other observers. In the series here reported upon it did not occur; but two patients, each with hundreds of milia after a first planing by other dermatologists, were treated. These lesions can best be removed by making an opening with a Hagedorn needle and gently lifting out the seed and the lining with iris scissors. It is the author's impression that this complication occurs when planing is carried too deep, scarring the pilosebaceous ducts, damming the flow of sebum and leading to milia formation.

Pyoderma

Pyoderma has been reported as a sequela by some observers. This was not a problem in the present series. After the first few cases the use of antibiotic ointments and dressings was discontinued as unnecessary. No ointments are used at all. For three postoperative days an inert hydrophobic plastic film gauze dressing is used, and after this no dressings at all.

Indications and Contraindications

Careful selection of patients is to be emphasized, and indications and contraindications for plastic planing, have become clearer in the past year or two.

(a) Patients with postacne scarring can be helped in varying degrees. The best results are obtained when the scars are broad and flat. Steep, "ice-pick" scars are much more difficult and cannot be completely removed. The patient should be told of this in the simplest possible language.

(b) Linear raised keloids and scars can more easily be improved than linear depressed scars.

(c) Decorative tattoos with multicolored pigments situated deep in the corium are particularly difficult to eradicate. They should not be treated by the plastic planing method, as it is likely that an unsightly keloidal scar will result if the necessary deep multiple planings are carried out.

(d) Portwine marks. The author believes planing is not the treatment of choice for a portwine vascular nevus, owing to the depth of the corium usually involved in the pathologic process.

(e) Epidermal nevi. Although the plastic planing procedure has been advocated for the removal of benign tumors and nevi, it is well to call attention to the difficulty entailed in dealing with epidermal nevi (nevus unius lateralis). When lesions such as these are removed surgically, healing takes a long time and the cosmetic result is poor. There seems to be some abnormality not only of the epidermis but also of the connective tissue underlying the epithelial nevus. Therefore, such a tumor if removed by plastic planing heals no more satisfactorily than if excised, removed with electrocautery or dealt with by cryotherapy.

(f) Malignant tumors should be treated by the more standard methods familiar to all.

Since the planing treatment is for cosmetic purposes, dermatologists who carry out the therapy will be confronted with new sets of problems in interpersonal relationships not altogether familiar to them. Searching for information on the psychic aspects of plastic planing and its implications, the author was astonished to find there is no literature on the type of person who seeks cosmetic improvement, although it must be surmised that plastic surgeons, oral surgeons and orthodontists must all be familiar with the patient who is eminently dissatisfied with the result of treatment even though it may be considered fair or better by the therapist.

Now, for the first time, dermatologists are going to experience this distressing situation. Although this is a subject for a separate treatise, it may be pointed out in passing that the emotional scarring may be of greater importance than the scarring of the skin. The patient rarely has a realistic appraisal of the cosmetic problem, and just as he may be overly sensitive about, say, pockmarks, he may also have in mind's eye a rather overly hopeful image of how he will look after surgical planing. Moreover, plastic planing is not going to correct deep psychological disturbance nor is it going to remove anxiety or give poise. A neurotic and poorly adjusted person is going to be just as neurotic and poorly adjusted after planing as before.

435 North Roxbury Drive, Beverly Hills.